

RESPONSE TO OFFICE ACTION

Serial No. 10/660,161

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REMARKS

This response is intended as a full and complete response to the Office Action dated February 8, 2005. In view of the following discussion, the Applicants believe that all claims are in allowable form.

ELECTION/RESTRICTION

The Applicants confirm the election of claims 1-18. Claims 19-20 are cancelled without prejudice. The Applicants reserve the right to file divisional applications to further prosecute the cancelled subject matter.

CLAIM REJECTIONS**35 U.S.C. §103(b) Claims 1-18**

Claims 1-18 stand rejected as being unpatentable over United States Patent No. 6,322,714 Issued November 27, 2001 to *Nallan, et al.*, (hereinafter referred to as "*Nallan*"). The Applicants disagree.

Independent claim 1 recites limitations not taught or suggested by *Nallan*. *Nallan* teaches a process for etching polysilicon using a photoresist mask (e.g., the resist layer 195). Specifically, the chemistry taught by *Nallan* is selected, in part, due to the chemistries high selectivity of the polysilicon layer 170 relative to the overlying resist layer 195. (See, column 12, lines 8-24; and column 13, line 63 through column 14, line 8.) *Nallan* does not teach or suggest a method for etching a polysilicon layer using a hard mask.

Moreover, as *Nallan* teaches a chemistry for etching a filmstack different than what is claimed, a discovery of the claimed ratio of volumetric flow rates for the gas mixture of claim 1 could not be deduced from the teachings of *Nallan* as a matter of routine experimentation. Thus, *Nallan* does not teach or suggest a method for etching a polysilicon layer using a hard mask, wherein the polysilicon layer is etched using a plasma maintained from a gas mixture comprised of a bromine-containing gas, a chlorine-containing gas, an oxygen-containing gas and NF_3 gas, the gas mixture having a volumetric flow ratio of bromine-containing gas plus chlorine-containing gas to NF_3

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gas in the range of 1:20 to 1:5, as recited by claim 1.

Therefore, as *Nallan* does not teach or suggest all the claim limitations of claim 1, a prima facie case of obviousness has not been established.

Moreover with regards to claims 2-13, *Nallan* does not teach or suggest a gas mixture used for etching polysilicon that includes N₂ gas. The Applicants respectfully disagree with the Examiner's assertion that it is obvious to include N₂ gas when NF₃ is utilized for etching. The Applicants respectfully request the Examiner to provide support for this assertion. Without support for the Examiner's assertion, the Applicants submit that it is not obvious to add N₂ gas to etching chemistries having NF₃. Thus, *Nallan* does not teach or suggest the limitations recited by claims 2-13.

With regard to claims 4-13, *Nallan* does not teach or suggest etching polysilicon using more than one gas mixture. Thus, *Nallan* does not teach or suggest the limitations recited by claims 4-13.

Thus, the Applicants submit that independent claim 1, and claims 2-18 dependent therefrom, are patentable over *Nallan*. Accordingly, the Applicants respectfully request the rejection be withdrawn.

NEW CLAIMS

Claims 21-25 have been added. The Applicants submit that these claims are fully supported by the specification, and that no new matter has been entered. The Applicants additionally submit that claims 21-25 are patentable over the references of record. Accordingly, the Applicants request allowance of the new claims.

CONCLUSION

Thus, the Applicants submit that all claims now pending are in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issuance are earnestly solicited.

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If, however, the Examiner believes that any unresolved issues still exist, it is requested that the Examiner telephone Mr. Keith Taboada at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

May 6, 2005
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I hereby certify that this correspondence is being transmitted by facsimile under 37 C.F.R. §1.8 on May 6, 2005 and is addressed to Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, Facsimile No: (703) 872-9306.


Signature
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5-6-05
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